

# Work Order ID 68702

Wednesday, April 20, 2011 8:27:08 AM

Page 1

Item ID: D205-634-041

Accept

Revision ID:

Item Name: Replacement Skidtube

Start Date: 4/20/2011 Start Qty: 1.00

Required Date: 4/25/2011 Req'd Qty: 1.00

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run

Start

Stop

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID

Tool #

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

Draw Nbr

Revision Nbr

D2580-041

Rev.D DEO-D1

100



DC

Document Control

DOCUMENT CONTROL

Memo

Photocopy D205-634 bluefile & type labels per PPP D205-634-041

0.00

0.00

110



CNC Bend 1

CNC Delta 100 Bender

BENDING MACHINE - SKIDTUBES

Memo

1-Bend as per program D2580.C on CNC Bender and Folio 16

2-Cut tubes as per Dwg. D2580

3- scribe batch# in aft end of tube

0.00

0.00

NA

1

BEI/05/02

CHC7002  
CHC004  
(welder S)

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

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**Accept**

**Setup Start**

**Stop**

**Cust Item ID:**

[REDACTED]

**Customer:**

**Reference:**

Run Start



**Approvals:**      **Process Plan:** \_\_\_\_\_ **Date:** \_\_\_\_\_ **Tooling:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Stop**



QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

### Operation Description

### Set Up/ Run Hours

Tool ID	Tool #	Plan Code
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**Accept  
Qty**

Reject  
QtyReject  
Number

**Insp.  
Stamp**

120



## Skidtubes

## Memo

0.00

0.00

1- Deburr ends and remove bending marks

2- Prepare tube for swaging as per QSI 002

130



QC

## Memo

0.00

0.00

## Quality Control

11-5-3

W/O:		WORK ORDER CHANGES						
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Setup Start



Revision ID:

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Customer:

Reference:

Run Start



Approvals: Process Plan: Date: Tooling: Date:

Stop



QC: Date: SPC (Y/N): Date:

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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140

0.00



Skidtubes

Skidtubes

Memo

0.00

1-Weld step D2576 as per Dwg. D2580 and QSI 004

A/R Aluminum Rod

M116577

BE 11/05/04

2-Grind welds on step as per Dwg D2580

IB

11/05/04

3-Insert D4202-1 spacer, swage as per QSI002 and trim/ grind flush per QSI002 and dwg. Hold x-bolt with DT9701 Use tube expander 1/2 x 17G to start expansion and finish with 1/2 x 18G to achieve dwg dimension.

WELDED

A/R M116577

BE 11/05/04

4-Drill holes for wearplates using DT 8217 & DT8937 Open holes to 19/64", adjust stopper not to hit web. Debur

IB 11/05/04

6-Drill pilot holes for aft cap using DT 8215 Open holes to 0.208". Debur

7-Drill pilot holes for Tow ring using DT8091, open to .640" and Debur

BE 11/05/04

8- Counter bore As Per Dwg

150

QC10- Inspect visual per QSI004- ground welds

0.00



QC

Memo

0.00

Quality Control

S 11/05/05

W/O:		WORK ORDER CHANGES						
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Customer:

Reference:

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Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Stop



QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
160  QC Quality Control	QC5- Inspect part completeness to step on W/O  Memo	0.00  0.00				(X)			
170  HandFinish Hand Finishing	Pressure Wash per QSI005 4.3  Memo Re-alodine tube as per QSI 005 section 4.1.2.1 do not acid etch and leave fwd cap out of solution.	0.00  0.00				(X)			
180  Powdercoat Powder Coating	White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum  Memo START TIME: OVEN TEMPERATURE: FINISH TIME:	0.00  0.00							

M116964

8=30  
3230  
9-00

=7m-f

(X)

11/05/05

(X) M-f 11/06/06

W/O:		WORK ORDER CHANGES						
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Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start  
Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

190

QC3- Inspect Part Finish

0.00

QC

Memo

0.00

Quality Control

1 BL 11-5-9

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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Item ID: D205-634-041  
Revision ID:  
Item Name: Replacement Skidtube

Accept

Setup Start

Stop

Start Date: 4/20/2011 Start Qty: 1.00  
Required Date: 4/25/2011 Req'd Qty: 1.00

Cust Item ID:  
Customer:

Reference:

Run Start

Stop

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_  
QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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200



HandFinish

Hand Finishing

Memo

0.00

1-Install inserts & wearplates & Gaskets as per Dwg. D2580. Use a drop of Sikaflex on insert holes before installing wearplates.  
A/R ☐ ☐ ☐ Sikaflex-291 ☐ 1116 945  
Sikaflex expire date: 12-01

2-Coat D2594-3 O' rings with Petroleum Jelly and install on D2594-1 plugs as per Dwg D2580

3-Inspect for foreign object per QSI 024

4-Install 2855 Aft Cap as per Dwg D2580 and seal Fwd Step & Aft Cap with Sikaflex. Clean excess adhesive  
A/R ☐ ☐ ☐ Sikaflex-291 ☐ 1116 945  
Sikaflex expire date: 12-01

5-Wing Walk as per Dwg D2580 and QSI 005 4.4  
Batch: 117315

1 BR 11-5-10

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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

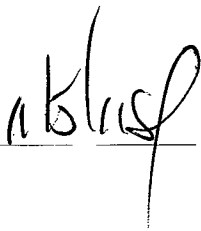

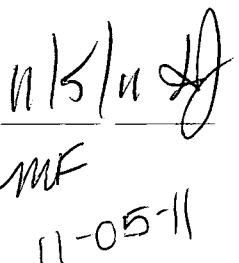
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Item ID:	D205-634-041	Accept		Setup	Start	
Revision ID:					Stop	
Item Name:	Replacement Skidtube					
Start Date:	4/20/2011	Start Qty:	1.00		Cust Item ID:	
Required Date:	4/25/2011	Req'd Qty:	1.00		Customer:	
Reference:						

Approvals:	Process Plan:	Date:	Tooling:	Date:	Run	Start	
	QC:	Date:	SPC (Y/N):	Date:		Stop	

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
210  QC Quality Control	QC5- Inspect part completeness to step on W/O  <b>Memo</b> Inspect Aft Cap, Fwd Step and Wing Walk of work to Current Step Inspect for Foreign objects per QSI 024	0.00 0.00		8 ules/104					
220  Packaging Packaging	Packaging  <b>Memo</b> Identify and pack for shipping as per PPPD205-634-041 Location: _____ PPP Rev: _____	0.00 0.00		PPP 67354					
230  QC Quality Control	QC21- Final Inspection - Work Order Release  <b>Memo</b>	0.00 0.00							 MF 11-05-11

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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**NOTE:** Date & initial all entries

# Picklist Print

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Wednesday, April 20, 2011 8:27:28 AM

Work Order ID: 68702



Parent Item: D205-634-041



Parent Item Name: Replacement Skidtube

Start Date: 4/20/2011

Required Date: 4/25/2011

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev:N 02.08.28 FP was QC5 in Step 27; Added QC5 to Step 30  
KJ IPP Rev P 10.02.19  
per PAR09-043 EC verified by:DD  
IPP Rev. O 06.02.28 Added paperwork EC  
IPP Rev:P 07-07-09 SS Wearplates & Gaskets JLM IPP Rev:Q  
10.12.01 as per chg003 DD verf:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

D4202-1	D2579	Manufactured	No			140	Each	443.0000	20	20			
Spacer													

Location	Loc Qty	Loc Code
LG002	443	
66929	106	
67129	196	
67308	1	
67430	140	

BE 11/05/04  
B 68737 ~20

D2580-1		Manufactured	No			110	Each	6.0000	1	1			
205 Skidtube bent detail													

Location	Loc Qty	Loc Code
LG	6	
67646	2	
68564	2	
68566	2	

BE 11/05/02  
B 67824 ~1

D2576-3		Manufactured	No			140	Each	14.0000	1	1			
Step (maching detail)													

Location	Loc Qty	Loc Code
LG	14	
52215	14	

BE 11/05/04

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

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# Picklist Print

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Work Order ID: 68702



Parent Item: D205-634-041



Parent Item Name: Replacement Skidtube

Start Date: 4/20/2011

Required Date: 4/25/2011

Start Qty: 1.00

Required Qty: 1.00

D2855 Manufactured No 200 Each 70.0000 1 1



Cap

Location Loc Qty Loc Code

FP007

70

53791 ✓

33

65519

2

65569

35

1 BR 11-5-10.

AN3-5A Purchased No 200 Each 1,304.000 2 2



Bolt

Location Loc Qty Loc Code

ST350

1304

115371 ✓

500

116632

4

117423

800

2 BR 11-5-10.

AN960JD10L NAS1149D0332J Purchased No 200 Each 0.0000 2 2



Washer

117291

2 BR 11-5-10.

ALS7-1032-130 Purchased No 200 Each 449.0000 50 50



Insert

Location Loc Qty Loc Code

ST281

200

117331 ✓

200

ST282

249

116800

249

50 BR 11-5-10.

ALS4-1032-130

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W/O:		WORK ORDER CHANGES						
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Work Order ID: 68702

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Parent Item Name: Replacement Skidtube

Start Date: 4/20/2011

Required Date: 4/25/2011

Start Qty: 1.00

Required Qty: 1.00

AN3C4A Purchased No 200 Each 2,358.000 50 50



BOLT

Location Loc Qty Loc Code

ST350 2358  
116924 358  
117094 1000  
117313 1000

AN960C10L NAS1149C0332R Purchased No



117291

0.0000 50 50

50 BR 11-5-10.

50 BR 11-5-10.

washer

D3566-13 Manufactured No



41.0000 1 1

Gasket

Location Loc Qty Loc Code

FP014 41  
66550 21  
68341 20

D3566-5 Manufactured No



27.0000 1 1

Gasket

Location Loc Qty Loc Code

FP015 27  
66552 5  
67589 22

1 BR 11-5-10.

1 BR 11-5-10.

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W/O:		WORK ORDER CHANGES						
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Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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Start Date: 4/20/2011

Required Date: 4/25/2011

Start Qty: 1.00

Required Qty: 1.00

D3566-1 Manufactured No 200 Each 36.0000 2 2



Gasket

Location

Loc Qty

Loc Code

FP015

36

68344 ✓

36

D3564-11 Manufactured No 200 Each 2.0000 1 1



Wearshoe

Location

Loc Qty

Loc Code

FP019

2

68350 ✓

2

D3564-13 Manufactured No 200 Each 38.0000 1 1



Wearshoe

Location

Loc Qty

Loc Code

FP017

38

66136 ✓

16

66549

6

66805

16

D3564-9 Manufactured No 200 Each 3.0000 1 1



Wearshoe

Location

Loc Qty

Loc Code

FP019

3

67590 ✓

3

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Parent Item Name: Replacement Skidtube

Start Date: 4/20/2011

Required Date: 4/25/2011

Start Qty: 1.00

Required Qty: 1.00

D3564-5 Manufactured No 200 Each 24.0000 1 1



Wearshoe

Location	Loc Qty	Loc Code
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FG	2	
----	---	--

34806	2	
-------	---	--

FP019	22	
-------	----	--

66551	10	
-------	----	--

67588 ✓	12	
---------	----	--

D2594-3 Manufactured No 200 Each 1,304.000 16 16



O-Ring, 205 Skidtube

Location	Loc Qty	Loc Code
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FP-A	1304	
------	------	--

65518 ✓	304	
---------	-----	--

66952	1000	
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D2594-1 Manufactured No 200 Each 403.0000 16 16



Plug, 205 Skidtube

Location	Loc Qty	Loc Code
----------	---------	----------

FP-A	403	
------	-----	--

42807	28	
-------	----	--

66122	148	
-------	-----	--

66932 ✓	220	
---------	-----	--

67441	7	
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**DART****RELEASED**  
07.06.28**DEO ATTACHED**

DESIGN	DRAWN BY	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
CHECKED	APPROVED	DRAWING NO. D2580	REV. 0 SHEET 1 OF 3
DATE 07.02.27		TITLE 205 SKIDTUBE ASSEMBLY	SCALE NTS
A	96.09.16	NEW ISSUE	
B	96.12.02	AS MANUFACTURED	
C	98.08.26	REDRAWN, INCLUDED DEO 9094/9097	
D	07.02.27	CHANGE TO SS WEARPLATES AND GASKETS, INCLUDE DEO 9124/9183	

QTY -041	QTY -045	Part Number	Description
X		D2580-041	SKIDTUBE ASSEMBLY
	X	D2580-045	SKIDTUBE ASSEMBLY
1	1	D2500-1-190	EXTRUSION
1	1	D2576-3	STEP
20	24	D2579	CROSS BOLT SPACER
16	16	D2594-1	PLUG
16	16	D2594-3	O-RING
1	1	D2596	205 WEB
1	1	D2855	AFT CAP
1	1	D3564-5	WEARSHOE
1	1	D3564-9	WEARSHOE
1	1	D3564-11	WEARSHOE
1	1	D3564-13	WEARSHOE
2	2	D3566-1	GASKET
1	1	D3566-5	GASKET
1	1	D3566-13	GASKET
50	50	ALS7-1032-130 or AKS7-1032-130 or AKS4-1032-130 or AELS-1032-130	INSERT
50	50	AN3C4A	BOLT
2	2	AN3-5A	BOLT
50	50	AN960C10L	WASHER
2	2	AN960JD10L	WASHER

SHOP COPY  
RETURN TO  
ENGINEERING  
UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. 68702

PS 11-04-20

**GENERAL NOTES:**

- 1) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 2) ALL DIMENSIONS ARE IN INCHES
- 3) INSERT D2596 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241 ADHESIVE PER DART QSI 015 BEFORE BENDING. ENSURE HOLES LINE-UP.
- 4) BEND AS A SMOOTH RADIUS STARTING WITH A MAXIMUM CENTERLINE RADIUS OF 60 AND ENDING WITH A MINIMUM RADIUS OF 30. A MAXIMUM REDUCTION OF 0.200 IN DIAMETER IS ALLOWABLE IN THE BENT PORTION OF THE TUBE.
- 5) USE DART DRILL TEMPLATE TD2577-205 TO LOCATE AND DRILL Ø0.297 HOLES FOR WEARSHOE INSERTS. INSTALL ALS7-1032-130 PER SECTION D-D (50 PLACES) AFTER FINISH. INSTALL AN3C4A BOLTS AND AN960C10L WASHERS WITH SIKAFLEX-241/-291.
- 6) WELDING TO BE DONE PER DART QSI 004.
- 7) FINISH:  
SEE NOTES ON  
PAGE 2 FOR D2580-041 AND  
PAGE 3 FOR D2580-045
- 8) INSERT D2594-1 PLUG C/W D2594-3 O-RING IN HOLES MARKED 'P' (BOTH SIDES OF TUBE) AFTER FINISH (16 PLACES).

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W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE		By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



W/O:		WORK ORDER CHANGES						
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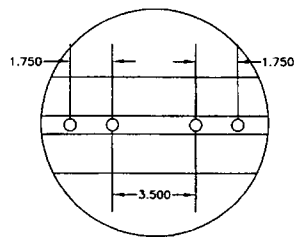
Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

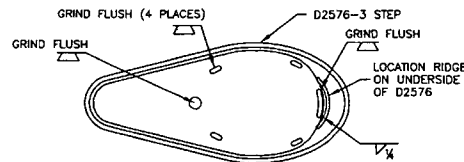
**NOTE:** Date & initial all entries

u/b 68702

DETAIL E  
SCALE 5:24



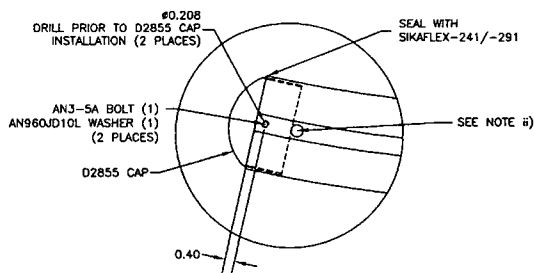
DETAIL F  
SCALE 5:24



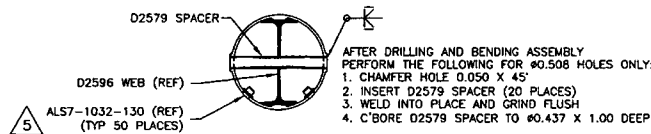
RELEASED  
07-06-78

DEO ATTACHED

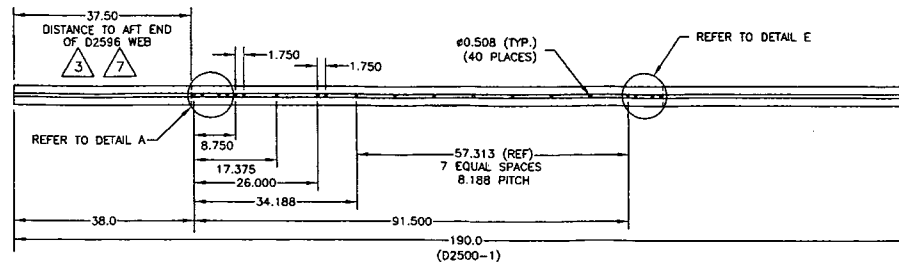
DETAIL G  
SCALE 5:24



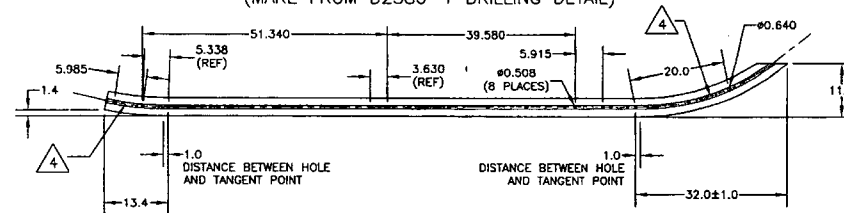
SECTION H-H  
SCALE 5:24



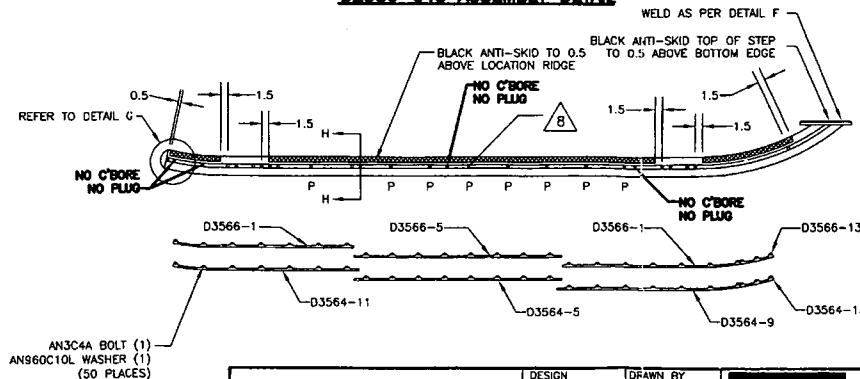
D2580-1 DRILLING DETAIL



D2580-5 BENDING AND CUTTING DETAIL  
(MAKE FROM D2580-1 DRILLING DETAIL)



D2580-045 ASSEMBLY DETAIL



D2580-045 NOTES

- FINISH: ACID ETCH, ALODINE PER DART QSI 005 4.1 PRIOR TO INSERTING D2596 WEB. POWDER COAT ENTIRE ASSEMBLY GREEN (REF. 4.3.5.8) PER DART QSI 005 4.3. BLACK ANTI-SKID PAINT AS INDICATED PER DART QSI 005 4.4.
- IT IS ACCEPTABLE TO GRIND A RELIEF IN THE D2855 AFT CAP TO PREVENT INTERFERENCE WITH THE SPACER AT THIS LOCATION.

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DESIGN RH	DRAWN BY RH	<b>DART</b>	DART AEROSPACE LTD. MARKHAM, ONTARIO, CANADA
CHECKED H	APPROVED H	DRAWING NO. D2580	REV. D
DATE 07.02.27	TITLE 205 SKIDTUBE ASSEMBLY	SHEET 3 OF 3	SCALE 1:24

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

DRAWING NO. D2580	TITLE 205 SKIDTUBE ASSEMBLY	REV. D	DART AEROSPACE LTD ENGINEERING ORDER		D.E.O. NO. D2580-D-1	SHEET NO. SHEET 1 OF 1	SCALE NTS
DRAWN <i>UP</i>	CHECKED <i>L</i>	MFG. APPR. <i>B</i>	APPROVED <i>MP</i>		DE APPR. <i>H</i>		
DATE 10.09.22	DATE 10.11.04	DATE 10.11.04	DATE 10/11/04		DATE 10.11.04		

**PURPOSE:**

CHANGE ALL WELDED CROSSBOLT SPACERS TO SWAGED SPACERS

**CHANGE:**

PARTS LIST IS AMENDED AS FOLLOWS:

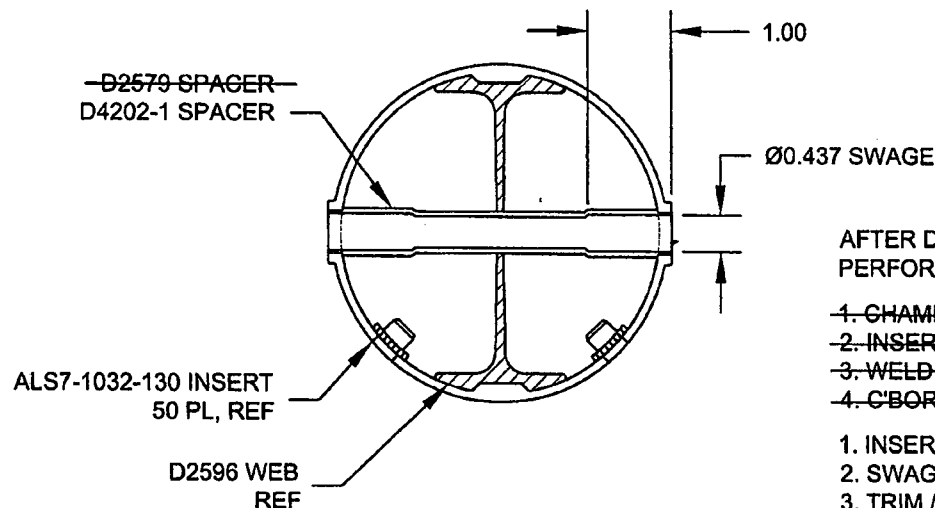
WAS

QTY	QTY	PART NUMBER	DESCRIPTION
-041	-045		
20	24	D2579	CROSS BOLT SPACER

IS

20	24	D4202-1	SPACER
----	----	---------	--------

SECTION D-D & SECTION H-H ARE AMENDED AS FOLLOWS:



**SECTION D-D**  
NOT TO SCALE

**SECTION H-H**  
NOT TO SCALE

**RELEASED**  
2010-11-18  
*MP*

AFTER DRILLING AND BENDING ASSEMBLY  
PERFORM THE FOLLOWING FOR Ø0.508 HOLES ONLY:

1. CHAMFER HOLE 0.050 X 45°
2. INSERT D2579 SPACER (20 PLACES)
3. WELD INTO PLACE AND GRIND FLUSH
4. C'BORE D2579 SPACER TO Ø0.437 X 1.00 DEEP

1. INSERT D4202-1 SPACER, 20 PL (-041) OR 24 PL (-045)
2. SWAGE TO Ø0.437 X 1.00 DEEP PER QSI 002
3. TRIM / GRIND FLUSH PER QSI 002

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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## Linda Lacelle

**From:** Mike Petsche <mpetsche@dartaero.com>  
**Sent:** April 18, 2011 10:42 AM  
**To:** 'Linda Lacelle'; dshepherd@dartaero.com  
**Cc:** 'Bill Beckett'; 'Chris Provencal'; 'Eric Charbonneau'  
**Subject:** RE: Alum. Solution Anneal - swaging

Well I'm not sure what to say.

It is my understanding that the swaging will still make sense even with the extra hoops we need to jump through.

If there is still uncertainty on the delivery of the material, we CAN still weld them if we need to.

And while this might be less than "world class", couldn't we take some of our tubing that we have in stock and zap it with the welder to knock down the temper a little? Ground clamp on one end, torch on the other.....BZZZZZZT.

(I'm only sort of joking....because I bet it would work)

**From:** Linda Lacelle [mailto:llacelle@dartaero.com]  
**Sent:** April 18, 2011 9:44 AM  
**To:** dshepherd@dartaero.com; 'Mike Petsche'  
**Cc:** Bill Beckett; Chris Provencal; Eric Charbonneau  
**Subject:** RE: Alum. Solution Anneal - swaging  
**Importance:** High

So any thoughts about going fwd for now with 205's? We are down to 6, and I don't want to run out as we have orders for these for early May.

LL

**From:** Linda Lacelle [mailto:llacelle@dartaero.com]  
**Sent:** April 12, 2011 8:11 AM  
**To:** dshepherd@dartaero.com; 'Mike Petsche' (mpetsche@dartaero.com)  
**Cc:** Bill Beckett (bbeckett@dartaero.com); Chris Provencal (cprovencal@dartaero.com); Eric Charbonneau (echarbonneau@dartaero.com)  
**Subject:** FW: Alum. Solution Anneal - swaging

So if we send them 400 pcs of the 6061T6 tube, they can temper it to T4 for a cost of 1850.00..

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**From:** John Spencer [mailto:johns@metcor.biz]  
**Sent:** April 12, 2011 8:04 AM  
**To:** llacelle@dartaero.com  
**Subject:** Alum. Solution Anneal

Linda,  
Metcor could process the tubes within a few days after receiving.  
Price for the lot is \$1850 including conductivity test.  
Would prefer 8 inch cut to length, if not we could manage 4 " lengths.  
Please let me know and contact me on my cell.

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**From:** dshepherd@dartaero.com  
**Sent:** April 18, 2011 11:36 AM  
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**Cc:** Bill Beckett; 'Chris Provencal'; 'Eric Charbonneau'  
**Subject:** Re: Alum. Solution Anneal - swaging

Makes sense to me ... We don't want to get caught short ... Make sure that if we do this, they are identified with the old CHG number.

David

Sent from my BlackBerry device on the Rogers Wireless Network

**From:** "Linda Lacelle" <llacelle@dartaero.com>  
**Date:** Mon, 18 Apr 2011 11:21:10 -0400  
**To:** 'Mike Petsche' <mpetsche@dartaero.com>; <dshepherd@dartaero.com>  
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CHG ~~CHG~~ C07

D2579

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CHG ~~007~~

D2579

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Regards,

John Spencer

**Metcor Inc.**  
Metcor Certified  
johns@metcor.biz  
514-386-1620



NO. 249

AWS D17.1.2001  
QUALIFICATION TEST RECORD

Name: Barclay Elliott  
Job number: 67531  
Part number: D205 634 041  
Description: 205  
Welding Process: Tig ☒ Mig ☐  
Base material: Aluminum  
Current: AC ☒ DC ☐

TEST REQUIREMENTS AND RESULTS

Visual: pass ☒ fail ☐  
Penetration: pass ☒ fail ☐

UNACCEPTABLE

Cracks: pass ☒ fail ☐  
Undercut: pass ☒ fail ☐  
Pin holes: pass ☒ fail ☐  
Overlap (cold lap): pass ☒ fail ☐  
Porosity (surface): pass ☒ fail ☐  
Coloration: pass ☒ fail ☐

Qualifier Pat Gump Date of Test Coupon 11-04-25

Welder Barclay Elliott Date of Test Coupon 11-04-25

The above named individual is qualified in accordance with AWS D17.1.2001 to weld